

## REMARKS

Claims 1, 3-6, 8, 63-64, and 66-73 were pending. Claims 72-73 have been cancelled. Claims 1, 8, 63 and 64 have been amended. New claims 74, 75 and 76 have been added. Therefore, claims 1, 3-6, 8, 63-64, 66-71, and 74-76 will be pending upon entry of the present amendment. No new matter has been added.

Support for the amendments to claim 1 can be found, for example at page 2, lines 1-19, and page 24, lines 30-31 of the specification as originally filed. Support for the amendments to claims 63 and 64 can be found, for example, at least at page 1, lines 31-37 of the specification as originally filed. Claim 8 was amended to correct a grammatical error. Support for new claims 74 and 75 can be found at least in the claims as originally filed, and at page 3, lines 23-26, page 22, lines 1-3, page 24, lines 1-34, and at page 53, lines 35-37 of the specification as originally filed. Support for new claim 76 can be found, for example, at least in the claims as originally filed and at page 1, lines 31-37.

Applicant notes with appreciation that the Examiner has withdrawn the rejection of the claims under 35 U.S.C. § 112, first paragraph.

### ***Rejection of Claims 1, 3-5, 8, 64, and 67-70 under 35 U.S.C. § 102(b)***

Claims 1, 3-5, 8, 64 and 67-68 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Ribi (U.S. Patent No. 4,859,538).

In claim 1 and its dependent claims, Applicant claims a method for forming a two-dimensional ordered array of proteins which are not solubilized using detergent. The method includes contacting a population of proteins with a gas-aqueous interface; laterally compressing said population to an appropriate pressure, wherein protein is not solubilized using detergent. In claim 64 and its dependent claims, Applicant claims a method of forming three dimensional crystals of water insoluble membrane proteins.

Ribi describes a method for the synthesis of articles comprising at least one surfactant layer and at least one protein layer specifically bound to the surfactant layer through the use of surfactant bound ligands. Ribi states throughout the application that his invention “requires a specific binding between the ligand bound to the surfactant and the protein” (col. 4, lines 64-66). Furthermore, Ribi specifically are directed to ***soluble proteins*** which are further solubilized using surfactants and other detergents. Ribi fails to teach or suggest a method for forming a two- or three- dimensional ordered array of water ***insoluble*** proteins, let alone water insoluble membrane proteins without the use of detergents, as claimed by Applicant.

Therefore, Applicant respectfully requests that this rejection of claims 1, 3-5, 8, 64 and 67-70 under 35 U.S.C. § 102(b) be withdrawn.

***Rejection of Claims 4, 6, 63, 69 and 71 under 35 U.S.C. § 103(a)***

Claims 4, 6, 63, 69, and 71 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Ribi and further in view of Ohlsson (*Biochemistry and Bioenergetics* (1995) vol. 38, pp. 137-148).

Claims 4 and 6 are dependent claims of claim 1. Like claim 1, claims 4 and 6 are directed to methods wherein the two-dimensional ordered arrays are formed at an air-aqueous interface wherein the protein is not solubilized using detergent.

Claims 63, 69, and 71 are directed to a method for forming a two- or three-dimensional ordered array of water insoluble membrane proteins.

As described above, Ribi *et al.* fails to teach a method for forming a two or three dimensional ordered array of water insoluble membrane proteins. Although according to the Examiner, Ohlsson describes that “cholera toxin may be bound to proteoliposomes on a surface,” it does not overcome the deficiencies of the primary reference to teach the formation of two or three dimensional ordered arrays at the air-aqueous interface of water insoluble membrane proteins as claimed by Applicant. Applicant’s claims are novel and unobvious over Ribi in view of Ohlsson *et al.*

Therefore, Applicant respectfully requests that this rejection of claims 4, 6, 63, 69, and 71 under 35 U.S.C. § 103 (a) be withdrawn.

**SUMMARY**

The cancellation of and/or amendment to claims should in no way be construed as an acquiescence to any of the Examiner’s objections and/or rejections. The cancellation of/amendments to the claims are being made solely to expedite prosecution of the above-identified application. Applicant reserves the option to further prosecute the same or similar claims in the present or another patent application. The cancellation of and/or amendments to claims herein are not related to any issues of patentability.

It is respectfully submitted that this application is in condition for allowance. If there are any remaining issues or the Examiner believes that a telephone conversation with Applicant's Attorney would be helpful in expediting prosecution of this application, the Examiner is invited to call the undersigned at (617) 227-7400.

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